

## **ABSTRACT**

A method of providing an apparatus and system comprising a complete smart solar electrical power generator system integrated into the form of a thin flat glass plate. The novel elements include: a micro-scale optical array, a new type of miniaturized photovoltaic cell, an inside-the-lens concentrator design, integral heat sinking and mechanical support, a sealed solid-state design with no air gaps and a new process for building it, combined reflective/refractive light concentration around the photovoltaic cell, variable solar concentration ratios, and a new integrated structure for interconnecting the system together.